

AMENDMENTS TO THE CLAIMS

Please enter the following amendments without prejudice or disclaimer.

This listing of claims will replace all prior versions, and listings, of claims in the application:

In the claims

Claim 1 (withdrawn): A polynucleotide comprising a sequence capable of hybridising selectively to

(a) SEQ ID NO: 1 or the complement thereof;

(b) a sequence from the 3.6 kb plasmid of *Propionibacterium freudenreichii* CBS 101022;

(c) a sequence from the 3.6 kb plasmid of *Propionibacterium freudenreichii* CBS 101023; or

(d) a sequence that encodes a polypeptide which comprises a SEQ. ID. No. 2 or 3, an amino acid sequence substantially homologous thereto or a fragment of either sequence.

Claim 2 (withdrawn): A polynucleotide which is an autonomously replicating plasmid that can remain extrachromosomal inside a host cell, which plasmid is derived from an endogenous *Propionibacterium* plasmid, and when comprising a heterologous gene is capable of expressing that gene inside the host cell.

Claim 3 (withdrawn): A polynucleotide according to claim 1 which is autonomously replicating in a host cell.

Claim 4 (withdrawn): A polynucleotide according to claim 3 in which the host cell is a *Propionibacterium*.

Claim 5 (withdrawn): A polynucleotide according to claim 4 in which the *Propionibacterium* is *Propionibacterium freudenreichii*.

Claim 6 (withdrawn): A polynucleotide according to claim 1 which is capable of selectively hybridising to one or more sequence (s) in SEQ ID No:1 which is (or are) necessary for autonomous replication in a *Propionibacterium*.

Claim 7 (withdrawn): A polynucleotide according to claim 1 which comprises either the 1.7 kb fragment of SEQ. ID. No. 1 delineated by restriction sites Sall and AlwNI or nucleotides 1 to 1750 of SEQ. ID. No. 1.

Claim 8 (withdrawn): A vector which comprises a polynucleotide according to claim 1.

Claim 9 (withdrawn): A vector according to claim 8 which is a plasmid.

Claim 10 (withdrawn): A vector according to claim 8 which additionally comprises a selectable marker.

Claim 11 (withdrawn): A vector according to claim 8 which is autonomously replicating in *E. coli*.

Claim 12 (withdrawn): A vector according to claim 8 which is an expression vector.

Claim 13 (withdrawn): A vector according to claim 12 which comprises an endogenous gene of a *Propionibacterium* or a heterologous gene operatively linked to a control sequence which is capable of providing for expression of the gene.

Claim 14 (withdrawn): A vector according to claim 13 in which the gene is the cobA gene.

Claim 15 (withdrawn): A vector according to claim 13 in which the heterologous gene encodes a polypeptide which is therapeutic in a human or animal.

Claim 16 (withdrawn): A polypeptide which comprises the sequence SEQ ID No: 2 or 3 or a sequence substantially homologous thereto, or a fragment of either said sequence, or is encoded by a polynucleotide as defined in claim 1.

Claim 17 (withdrawn): A host cell comprising a heterogeneous polynucleotide or vector according to claim 1.

Claim 18 (withdrawn): A host cell according to claim 17 which is a bacterium.

Claim 19 (withdrawn): A host cell according to claim 18 which is a *Propionibacterium* or *E. coli*.

Claim 20 (withdrawn): A process for producing a host cell according to comprising transforming or transfecting a host cell with a polynucleotide or vector according to claims 1.

Claim 21 (withdrawn): A process for the preparation of a polypeptide, or other compound, the process comprising cultivating or fermenting a host cell as defined in claim 17 under conditions that allow expression or production of the polypeptide or compound.

Claim 22 (withdrawn): A process according to claim 21 which is a fermentation process wherein the host cell is cultured in aerobic or anaerobic conditions.

Claim 23 (withdrawn): A process according to claim 21 in which the expressed polypeptide or produced compound is recovered from the host cell.

Claim 24 (withdrawn): A process according to claim 23 wherein the polypeptide is a protease, amylase, lipase or peptidase or the compound is vitamin B₁₂.

Claim 25 (withdrawn): A process according to claim 21 where the polypeptide is secreted from the host cell.

Claim 26 (withdrawn): A process according to claim 25 in which the polypeptide is expressed on the surface of the host cell and/or the polypeptide is an antigen or immunogen.

Claim 27 (withdrawn): A polypeptide or compound prepared by a process according to claim 20.

Claim 28 (currently amended): A process for the production of vitamin B₁₂ (cobalamin), the process comprising culturing a *Propionibacterium* host cell under conditions in

which the vitamin is produced and, if necessary, isolating the vitamin, wherein the *Propionibacterium* host cell contains a polynucleotide comprising a sequence that is:

- (a) SEQ ID NO: 1 or the complement thereof;
 - (b) a sequence from SEQ ID NO: 1 that corresponds to either the 1.7 kb fragment of SEQ ID NO: 1 delineated by restriction sites *Sa*I and *Al*wNI or nucleotides 1 to 1800 of SEQ ID NO: 1; or
 - (c) ~~a sequence that encodes the polypeptide of SEQ ID NO: 2 or SEQ ID NO: 3 or a polypeptide at least 70% homologous thereto, the latter polypeptide having the activity of the polypeptide of SEQ ID NO: 2 or SEQ ID NO: 3;~~
 - ~~—— (d) — a sequence according to feature (c) that is a fragment from SEQ ID NO: 1 corresponding to position 273 to 1184 or a fragment from SEQ ID NO: 1 corresponding to position 1181 to 1438; or~~
 - [[(e)]] a sequence that is at least 70% homologous to a sequence as defined under (a) [[,]] or (b) [[or (d)]] over a region of at least 100 contiguous nucleotides and which retains the ability to autonomously replicate in *Propionibacterium*;
- and a sequence that is an endogenous gene of a *Propionibacterium* ~~assisting in the production of~~ involved in vitamin B₁₂ biosynthesis operatively linked to a control sequence which is capable of providing for expression of the gene.

Claim 29 (canceled)

Claim 30 (withdrawn): A polypeptide according to claim 27 for use in a method of treating the human or animal body by therapy.

Claim 31 (withdrawn): A host cell according to any one of claims 17 for use in a method of treating the human or animal body by therapy or for use in an animal feed.

Claim 32 (withdrawn): Use of a host cell according to claim 17 to either make cheese or for use in cheesemaking.

Claim 33 (withdrawn): Use of a host cell according to claim 17 in the manufacture of a foodstuff or in an animal feed.

Claim 34 (withdrawn): A foodstuff comprising a polypeptide or compound according to claim 27.

Claim 35 (withdrawn): A foodstuff according to claim 34 for consumption by humans (e. g. a cheese, sausage) or by an animal.

Claim 36 (withdrawn): A process for manufacturing cheese or other fermented dairy product the process comprising using a host cell according to claim 17.

Claim 37 (withdrawn): A process according to claim 36 wherein the host cell is used instead of or in addition to lactic acid bacteria.

Claim 38 (withdrawn): A process according to claim 36 wherein the host cell is a *Propionibacterium* cell.

Claim 39 (withdrawn): A host cell which can be transformed or transfected with a vector according to claim 13.

Claim 40 (withdrawn): Use of a polypeptide or compound according to claim 27 to either make cheese or for use in cheesemaking.

Claim 41 (withdrawn): Use of a polypeptide or compound according to claim 27 in the manufacture of a foodstuff or in an animal feed.

Claim 42 (withdrawn): A foodstuff comprising a host cell according to claim 17.

Claim 43 (currently amended): A process according to claim [[2]]28, wherein the endogenous gene of a *Propionibacterium* is the *cobA* gene.

Claim 44 (new): A process according to claim 28 wherein the polynucleotide comprises a vector.

Claim 45 (new): A process according to claim 44 wherein the vector is a plasmid.

Claim 46 (new): A process according to claim 28 wherein the polynucleotide comprises a selectable marker.

Claim 47 (new): A process according to claim 28 wherein the polynucleotide is capable of autonomously replicating in *E. coli*.

Claim 48 (new): A process according to claim 28 wherein the host cell is a *P. freudenreichii*, *P. jensenii*, *P. theonii* or *P. acidipropionici* cell.

Claim 49 (new): A process according to claim 28 wherein the vitamin B₁₂ is isolated from the host cell or from the culture medium.